INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

24 April 2017 (am)

Subject SA2 – Life Insurance
Specialist Applications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
3. *You have 15 minutes of planning and reading time before the start of this examination. You may make separate notes or write on the exam paper but not in your answer booklet. Calculators are not to be used during the reading time. You will then have three hours to complete the paper.*
4. *Mark allocations are shown in brackets.*
5. *Attempt both questions, beginning your answer to each question on a new page.*
6. *Candidates should show calculations where this is appropriate.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.

1 A UK life insurance company writes only conventional without profits deferred and immediate annuities. They are written into the same fund, with a single investment portfolio covering both product types.

The company has just produced its Solvency II balance sheet for the current reporting period. The Solvency Capital Requirement (SCR) is calculated using the standard formula.

(i) (a) Outline the five risks which are likely to be most significant for this company.

(b) State the standard formula risk module to which each of these risks relates.

[5]

The company defines its "solvency ratio" on the Solvency II basis as the ratio of surplus assets (the excess of assets over technical provisions and SCR) to its total assets. It has a target range within which it aims to maintain this ratio.

In its latest Solvency II results, the solvency ratio is close to falling below the lower end of the target range.

(ii) Suggest ways in which the company could improve the solvency ratio. [9]

The company has decided to apply for a matching adjustment on its immediate annuities.

(iii) (a) Explain why this type of business may be appropriate for obtaining a matching adjustment.

(b) Explain how the matching adjustment will impact the Solvency II technical provisions.

[3]

(iv) Assess the likely impact of the matching adjustment on the standard formula SCR, making clear your reasoning. [4]

The Prudential Regulation Authority (PRA) requires a separate Solvency II balance sheet to be produced for business with a matching adjustment.

The company is therefore now undertaking an exercise to identify appropriate assets to match the immediate annuities for this balance sheet.

(v) Describe how it will identify appropriate assets and the factors that it will need to consider when doing so. [11]

(vi) Describe the other practical changes the company will have to implement in order to produce a separate Solvency II balance sheet for the immediate annuities. [3]

(vii) Comment on any additional considerations for the asset portfolio, in order to maintain future compliance with the PRA's requirement. [2]

As part of the developments, a new process is required to produce the matching adjustment assumption.

(viii) (a) List the three main Technical Actuarial Standards (TASs) which would need to be considered when creating the new process.

(b) Outline the relevance of each of these TASs to the new process. [3]

The company also publishes results on an International Financial Reporting Standards (IFRS) basis. The IFRS liabilities are determined in line with the historic Solvency I Pillar 1 approach.

(ix) Discuss the possible impact on the IFRS liabilities of the introduction of the matching adjustment and the other related changes. [4]

[Total 44]

2 A UK life insurance company writes a range of conventional without profits life insurance products.

The compliance department is currently reviewing the application process for setting up new policies. Its first task is to check that individuals can only apply for a life insurance policy on their own life or on the life of their spouse.

(i) Explain why this check is being performed. [2]

(ii) Describe the obligations on a customer for providing information to the life insurance company before entering into a contract. [3]

The company is developing a new regular premium unit-linked endowment assurance product. This will be the company's first unit-linked product, and it will be distributed by financial advisers.

The main features of the product are as follows:

- The premium is level for the term of the policy.
- The premiums can be invested in a range of unit-linked funds, including a fund that invests directly into property.
- The amount payable on surrender or at the end of the policy term is the value of the units held at that time.
- The amount payable on death is the maximum of the value of units at that time or the sum assured. The sum assured is the sum of the premiums payable over the whole term of the policy.
- A management charge, expressed as a percentage of the unit value, is taken each month by cancellation of units. The percentage charge cannot be changed during the contract.
- A mortality charge is taken each month by cancellation of units. The amount of charge taken is calculated as the maximum of the sum assured and the value of units at the date of death, multiplied by a mortality charge percentage. The table of mortality charge percentages is stated in the policy document and cannot be changed. The percentages vary by the customer's age at the time of the charge and their smoker status at the start of the policy. The percentages do not vary by gender.

(iii) Suggest the possible risks faced by the company in respect of unit pricing. [5]

(iv) Outline the other operational risks associated with this product and more generally within the company. [15]

The company plans to outsource the administration of this product to an external company.

(v) Comment on how this will impact the operational risks outlined in part (iv). [4]

(vi) Describe the other risks to the life insurance company associated with writing this product. [13]

(vii) Suggest ways by which the company could mitigate the risks identified in part (vi). [14]
[Total 56]

END OF PAPER